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GREEN MATTERS

A newsletter from the Alberta Environmentally Sustainable Agriculture Council

Water for Sustainability

From AESA Council's Chair

*By John Kolk,
Poultry Industry Council*

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Issue No. 13, Fall 2002

"Whiskey is for drinking; water is for fighting over." Mark Twain is credited with this quip. But it comes up every time water becomes an issue. We take water for granted until we have too much, too little or its quality is impaired.

Southern Alberta has faced all these issues in the past few years. First there were concerns about water quality in the Oldman River basin being impacted by farming, industry, recreation and cities, then a three-year drought, and finally this spring's floods. Other parts of the province have felt these issues in differing degrees over the years, but this summer's drought covering about two-thirds of the province hit headlines across the country.

Most of Alberta's water is in the northern half of the province and flows north, while most of the people and industry are in the south. We are legally obligated to share that limited water with our eastern and southern neighbours, and we cannot ignore the needs of our surrounding ecosystem. In a water-short land, we need to be deliberate about water use, quality and planning.

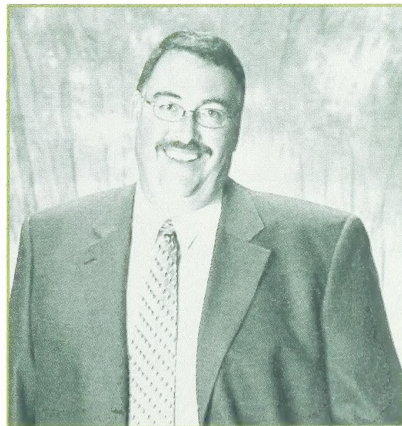
This issue of Green Matters talks about the Water for Life process to create a strategy for managing Alberta's water resources. This timely and important process addresses sustainability for our economic and environmental future. Albertans participating in the public consultation recognized that everyone has water needs and no one wants to get to the point of fighting over water.

The agricultural sector has worked with water issues since the first ranchers and farmers settled in the province. Farmers and ranchers understand the impact of all aspects of water better than most

Albertans and have been leaders in addressing them. As water demands increase, all Albertans will need to grapple with the four key issues in the water strategy:

- Healthy, sustainable ecosystems
- A safe, secure drinking water supply
- Reliable, quality water supplies for a sustainable economy
- The knowledge necessary to make effective water management decisions

The provincially funded Alberta Environmentally Sustainable Agriculture (AESA) program and the joint federal-provincial CAESA program that preceded it have monitored water issues and supported actions on water quality and use for the past decade. Actions by such agencies as the Cows and Fish program, community watershed groups, Municipal Agricultural Service Boards, Ducks Unlimited Canada and individual farms are all part of the solution to our water challenges.



Roth and Ramberg Photography Inc.

Mapping out Water's Future



Ducks Unlimited Canada

No one can go without water. We all need it. We can't just look at what is needed from our own parochial perspectives. We have to look at what's going to work down the road, because we're using more water all the time and there is a limit to how much we have," says Dennis McKerracher.

McKerracher, a hog farmer from the High River area, was one of several AESA Council members who participated in the Minister's Forum on Water. This Forum was the third phase in the Province's Water for Life consultation process to help shape a strategy for conserving, managing and protecting our water resources.

Robert Harrison of Alberta Environment says two catalysts prompted the development of the strategy: the serious drinking water problems in Walkerton, Ontario and North Battleford, Saskatchewan, and several years of drought in Alberta. Although these issues put the spotlight on water, he notes that Alberta faces many complex challenges in water management. These challenges include increasing demands on our finite water supply from a rapidly growing economy and population, our limited knowledge of the current supply and the current use by humans and ecosystems, and uncertainties about our future supply.

The consultation's first phase involved an Ideas Group of 15 Albertans representing diverse interests. The group met three times in late 2001 to identify a range of ideas for public discussions on water. These ideas formed the foundation for the second phase, a public consultation open to all Albertans, held in March and April of 2002. In the third phase, about 100 invited Albertans attended the two-day Minister's Forum in June. They reviewed input from Phase 2 and provided recommendations to the Honourable Lorne Taylor, Alberta's Environment Minister. The fourth phase,

now underway, is using those recommendations to develop an action-oriented water strategy to be completed in early 2003.

**"Albertans came to
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to change."**

In Phase 2, about 1,000 Albertans provided input through 15 community workshops, and more than 2,100 completed the questionnaire-style workbooks available at the workshops, on-line and from Alberta Government offices. This phase also included a random phone survey of 1000 Albertans to check that the results from the workshops and workbooks were representative of Albertans' views.

For Phase 3, Harrison says, "Lorne Taylor wanted to involve the people who live with water, work with water, use water." Participants included people from agriculture, energy, health, municipalities, environmental groups, academic institutions and many others. They were encouraged to report on the diversity of their discussions, rather than to form a consensus.

Nine major recommendations came out of the Forum. These include:

- There should be significant emphasis on watershed planning and management.
- Albertans must implement improved water conservation practices.
- A long-term forecast of supply along with improved demand and risk management approaches are needed to ensure good management in the future.

Bill McMillan from Equus Consulting Group Inc. was the Forum moderator. He says, "Two things really struck me about the consultation. The first was the seriousness with which people treated the issue and, at the same time, their openness to discuss different perspectives and that everyone had needs to address. The second was that Albertans came to the table prepared to change. We're very accustomed to people coming into major policy consultations with a strong motivation to not change. Here I was surprised repeatedly that people would suggest we can't keep using water the way we are now and expect that everything will be great in 20 years. That was very encouraging."

Phase 4 is being lead by a cross-ministry group from 15 Alberta Government agencies, including all departments with any connection to water. Harrison says, "Our target is to have a draft strategy to key stakeholders and the Forum participants early in 2003. We hope to have their input incorporated into a draft for the government to make a decision by early next year."

For details on the consultation and information about water in Alberta, visit the Water for Life website (www.waterforlife.gov.ab.ca).

**And the
winner is...**

Brian Trueblood of Dapp, Alberta was the winner of the Green Matters Reader Survey draw for two tickets to Growing Alberta's Harvest Gala Celebration held in October. Thanks to everyone who responded to the survey. Results will be published in the next issue of Green Matters.

Valuing Water, Conserving Water

The fundamental importance of water to Albertans and the need for water conservation came through clearly during the Water for Life consultation process. According to Dr. Bob Church, until recently, in Canada we have not truly valued water. He says, "When water is truly valued, you conserve it and you put a real economic value on it." Only with the mounting pressures on this resource from our increasing urban population, industrial and agricultural needs have our attitudes started to change. He adds, "I think the fact that water is being talked about now is really useful."

**"If you're in agriculture,
you're in the water
management and financial
risk management business."**

Church is a rancher in a long line of ranchers in southern Alberta, where cycles of drought are part of life. He has also had a distinguished career in science, research and innovation. To give just a few examples from his long list of accomplishments, he is chairman of the Alberta Science and Research Authority and one of the founders of the Faculty of Medicine at the University of Calgary, and he's been a director of various companies including Ciba-Geigy.

His perspectives on water have been shaped in part by his experiences in Israel and Western Australia - very dry regions where every drop of water counts. He has come to realize that, "If you're in agriculture, you're in the water management and financial risk management business."

Church believes all water users, including agriculture, must adopt a conservation mindset. Fortunately, recent advances are helping Alberta producers to use water more efficiently. For example, "that whole technology associated with the air drill and minimum till is a water management solution developed on the prairies of Western Canada," says Church. "This technology has been absolutely critical to our success in having

more output with less inputs. We have better water management, better soil management and reduced energy inputs while essentially doubling crop and other production. This year and last year, if we had still been using the cultivation technologies of the 1930s, the dust bowls of the '30s would look like little whirlwinds."

Dealing with Drought

Nature's cycle on the prairies includes recurring droughts. Addressing agricultural droughts requires both responses during drought crises and long-term planning and preparedness to reduce the risks from drought.

Habitat management helps drought-stricken producers

This year's drought brought heartfelt responses from individuals and agencies across Canada. One of the responding agencies was Ducks Unlimited Canada (DUC). In February 2002, DUC looked at the already severe drought on the prairies and found a way to help local farmers and ranchers. It created the Drought Response Program.

In Alberta, about 37,000 acres of DUC conservation lands, mostly in the central part of the province,

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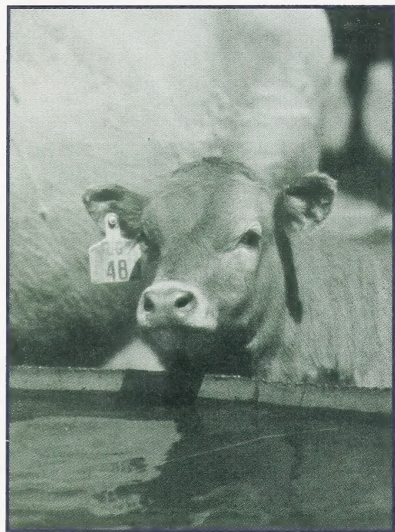
were made available to producers this year under the program. Les Wetter, the provincial coordinator for the program, explains, "We keep some of the lands we own and lease primarily for wildlife use. Other lands we allow grazing or haying on an annual basis. However, we manage all lands by haying and grazing once every four or five years because it makes the grass stands healthier. Given that the water conditions were very poor for waterfowl in many of these areas, we decided to make 2002 a management year for a much higher proportion of land in Alberta and Saskatchewan than we normally would."

The lands were opened through tender agreements or by prior agreements. DUC decided to focus the program's benefits on the community where DUC had the land. "To be eligible, you had to be within 10 miles of the quarter section that we were tendering, we preferred cow/calf operators, and we limited the number of acres to any one producer because we wanted to spread the benefits around," notes Wetter. The revenue from the program will be reinvested in forage and livestock projects to benefit both wildlife and agriculture.



Alberta Agriculture, Food and Rural Development

In drought years, migrating birds fly over the dry areas and continue north to find better conditions. Therefore the Drought Response Program did not have a large effect on waterfowl this year. However, DUC won't know the full effects on wildlife habitat until next spring, says Wetter. "We have taken a lot of the residual material off of the land, so it will not be as productive for waterfowl nesting and some other types of wildlife."



Ducks Unlimited Canada/Dan Wood

Although the program was not without habitat impacts, DUC felt it was important to share what it could with the community during this devastating time. Wetter says, "The best waterfowl habitat is in the privately held area of Alberta. So you need to be part of the community to influence change within that community. The Drought Response Program was a way of paying back the community. We were able to free up some land for grazing when it was really needed in the agricultural community, and we helped out about 250 Alberta producers."

Risk management approach to drought

Alberta's Agriculture Drought Risk Management Plan will help producers become less vulnerable to drought cycles and help government actions to be more proactive, coordinated and effective.

The plan was developed by Alberta Agriculture, Food and Rural Development (AAFRD) with input from Prairie Farm Rehabilitation Administration (PFRA), Alberta Environment, municipalities and other stakeholders. It consists of three components: drought preparedness, science-based monitoring, mapping and reporting, and a 'toolbox' of possible drought response options.

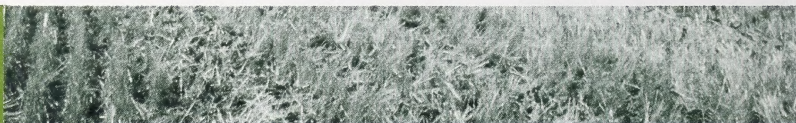
Shane Chetner of AAFRD explains, "Preparedness means that producers have a management strategy to drought-proof their ranches and farms." This proactive approach requires planning and action before the situation becomes serious.

The reporting aspect involves collecting, analyzing and distributing up-to-date drought information. With an advanced monitoring network across the province and development of drought models, Alberta Agriculture staff will be able to accurately assess current conditions and to predict future conditions. Information from this reporting system will help provincial, federal and municipal agencies to more effectively address drought situations, rather than responding with ad hoc approaches that provide only short-term solutions.

Chetner emphasizes the continuing need to prepare for and respond to drought. "From an impact perspective, the dry conditions took two or three years to get us where we are now in 2002. It's going to take two or three years of favourable conditions to get us out of where we are."

For more information, visit Alberta Agriculture's website (<http://www.agric.gov.ab.ca/>) and follow the links.

Advancing water management



Since its creation in 1997, the Alberta Agriculture AESA program has funded a wide range of projects and programs to help producers and processors adopt practices that conserve water and protect water quality. Here are just a few highlights:

Direct seeding

Minimum tillage and direct seeding systems increase the soil's organic matter content, which improves its ability to hold moisture. These systems also maintain a crop residue cover that traps snow, reduces evaporation, and prevents runoff water from carrying soil and other contaminants into streams and lakes.

Cropmasters, a producer group in northeastern Alberta, has conducted eight AESA-funded projects to demonstrate and evaluate aspects of direct seeding. Cropmasters president Larry Kitz sees the difference direct seeding has made in his own operation. "We've noticed an increase

in soil tilth, water-holding capacity and water permeability. When crops on conventional fields are starting to suffer from drought, we can usually go two to three weeks longer. So our window is wider to catch some extra moisture."

Rotational grazing

Rotational grazing systems use moderate grazing on a series of pastures to sustain forage production and protect water quality. Heavy grazing develops shallow-rooted plants, which are more severely affected by drought than are the deeply rooted plants developed under moderate grazing. Moderate grazing also reduces weed problems and retains a plant litter cover that conserves soil moisture and prevents soil erosion.

"With a well planned rotation, when those good rains do come back, your seed production will be higher and your pasture will be in a healthier state," says Troy

Ormann, conservation technician with the County of Lethbridge. The County has had a variety of AESA-supported rotational grazing projects, including some with riparian pastures (pastures along streams, rivers and lakes). Ormann says protecting water quality is a key part of riparian grazing because "healthy riparian vegetation filters contaminants from runoff."

Wastewater treatment

Meat processing operations can generate large amounts of wastewater. AESA has cost-shared several projects to improve wastewater treatment for these operations. The improved systems reduce contaminants in the wastewater and so can also reduce the surcharge the processor must pay for municipal treatment of the wastewater. As well, the various treatment processes can produce valuable byproducts like methane for power and a sludge that can be rendered into tallow for use in such things as cosmetics.

Larry Kitz

Although Larry Kitz has served as chair of AESA's North East Region Subcommittee for only a year, he's not new to the North East. He has lived all his life in the Two Hills area, and knows the challenges to environmentally sustainable agriculture in the region.



Roger Bryan/AARFD

"In our area, soil conservation remains a problem. We're in the new millennium and we're still having soil drifting. It just drives me nuts!" says Kitz. The other paramount concern is water. Although Mother Nature controls the weather, he notes producers can still take steps to conserve moisture, develop alternative water sources and use water more efficiently.

The Kitzs have a feedlot and a cow-calf operation as well as grains and seed grains. And they've added environmental stewardship to this mix – they have been direct seeding for 14 years, they compost their feedlot manure, and they have off-site watering systems in their pastures.

**"We must be aware of our
environment and work with it
instead of against it."**

Kitz is president of Cropmasters. This producer group's activities include projects like direct seeding demonstrations, hands-on marketing courses and "trying to put a dollar sign onto conservation." He explains, "We want to show producers that conservation can also make or save money -- increase their cash flow or efficiency to the point where they can realize a tangible economic benefit as well as the environmental benefit."

Kitz joined AESA Council as the representative of the North East Subcommittee and is also chair of Council's Communications Task Team. He is impressed by Council's diversity. "The members represent everything from producers to the processing industry to Ducks Unlimited. It's fantastic to see all these people converge at one meeting and express their views on issues. It's really refreshing to be thrown into that kind of a venue."

He also enjoys working with the North East Subcommittee, a varied group with representation from across the region. The subcommittee reviews the proposals from the region for AESA's Farm Based Program.

For Kitz, the key to the success of the Farm Based Program is that it shows by example. He says, "Farmers like to be 'show-me' people. They want to actually see something before they decide to incorporate it in their own operations."

Adoption of stewardship practices can be slowed by drought conditions, notes Kitz. "When producers are hit by terrible drought, their focus is no longer so strong on sustainable management. They just want to make their next mortgage payment.... We have to let producers know that, even though times are tough, we must trudge on and be sustainable, be aware of our environment, and work with it instead of against it."

Christine Mitzner

"I've always felt if you don't get out there and try to make a difference, then who's going to?" says Christine Mitzner. One way she's making a difference is through participating in organizations concerned with environmental and agricultural issues.

"I've been a farmer most of my life, and always cared about nature and the environment," she notes. The Mitzners' irrigated farm is near Strathmore in the Western Irrigation District. With her sons, she grows alfalfa and cereal crops, has a cow-calf operation, and raises purebred Charolais bulls. And eight of her grandchildren have 4-H steers.

Mitzner is a long-time member of the Alberta Surface Rights Federation. "We look at how oil patch activities affect our environment and farmers, and we are really interested in seeing that they stop practices like flaring that aren't good for the environment," she explains. "Technologies are available to nearly eliminate emissions from oil and gas plants, but they aren't being used." She was also president of the local surface rights group in the Strathmore area.

**"...you have to protect the
environment or you won't have
your farm for future use."**

Mitzner has also held various positions, including president, on the executive of Earthkeeping, a non-profit society. Its mandate is "to care for creation through research, policy development and education."



Roger Bryan/AARFD

"Earthkeeping was one of the early organizations that said we really care about the environment, and we have to look at what we're doing. We can't always look at the dollar sign to determine what we do. You have to be able to survive economically, but you have to protect the environment or you won't have your farm for future use," says Mitzner.

Nevertheless, she emphasizes the link between the environment and economic survival on the farm. "Economics can dictate that people should do things that are not good for the environment ... I don't think as a nation we've recognized the importance of small farms and the contribution of the rural community." She sees the need to find better ways to keep people on the farm and to help urban people understand issues in food, agriculture and rural life.

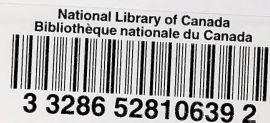
During the 30 years since Earthkeeping began, it has been involved in such wide ranging activities as manure management workshops and environmental farm plan workshops for farmers and supermarket tours to talk to urban people about issues in food and agriculture.

Mitzner represents Earthkeeping on AESA Council. She's pleased to see AESA building on the environmental farm plan concept. She says these plans help farmers to "see where there are potential hazards and potential negative environmental impacts from what they do. Speaking as a farmer, the more I know about the possible environmental effect of what I do, the more I can do about it."

Field Sampling for AESA Water Quality Monitoring Program

"We need to understand the linkages between agriculture and shallow groundwater."

Getting to Know Our Groundwater



Participants at the Minister's Forum on Water noted the need for more information on Alberta's groundwater quantity and quality. Several initiatives are already underway to improve our knowledge of this crucial water source, including one that's making existing groundwater data easier to use and another that's collecting vital information on groundwater quality.

Groundwater data at your fingertips

A series of Regional Groundwater Assessment Studies are putting data collected over the last 60 years into a user-friendly format. With this up-to-date information source, municipalities and landowners can easily find data for their areas.

These studies have two main purposes, explains Tony Cowen of Prairie Farm Rehabilitation Administration (PFRA) of Agriculture and Agri-Food Canada. "One is to provide municipalities with a tool to help manage their groundwater resource, including targeting their economic development and protecting the resource. The other purpose is to provide user-friendly maps, databases and a report to allow people to determine the groundwater potential in a given area."

For municipalities, the maps, reports and database help in planning and project-siting as well as broader considerations like identifying where groundwater levels are falling. For landowners, the database provides easy access to information. Cowen says, "Instead of poring through maps and the report, you can enter your land location, and the query pulls out some key data on each of the aquifers at your site – how much water is available, some water quality characteristics, and how deep you would have to drill to get the water."

So far, studies on 32 counties, municipal districts and special areas have been completed, and 12 more studies,

which will cover 24 municipalities, are underway. Each study is cost-shared between the municipality and PFRA's Rural Water Development Program. **For more information, visit <http://www.agr.gc.ca/pfra/water/groundw.htm>.**

Tapping into shallow groundwater quality

The Rural Water Development Program is also contributing funding to a pilot project to see if shallow groundwater quality might be related to agricultural intensity in Alberta. PFRA's Sharon Reedyk says, "We want to ensure that water quality meets the needs for all uses, including agriculture. So we need to understand the linkages between agriculture and shallow groundwater. Then if we are having an impact, we can work on mitigating that impact."

The project is a joint effort between PFRA and Alberta Agriculture, Food and Rural Development (AAFRD). This fall, AAFRD and PFRA staff will be sampling about 80 water wells in selected watersheds with various levels of agricultural intensity.

James Wuite of AAFRD says the project focuses on shallow groundwater for several reasons. "Deep aquifers can take an awfully long time to show any impact. Shallow aquifers are more likely to be affected in our lifetime." In addition, a survey of farmstead water quality in Alberta in the mid-1990s showed shallow groundwater might be at risk from agricultural activities. The quality of shallow groundwater is important because it is a water source for some users and because it can emerge and enter surface waters like rivers and lakes, or percolate down to deeper aquifers.

The main water quality contaminants related to agriculture are nutrients, pesticides and pathogens. To provide an initial look at the situation, the project is focusing on the nutrients nitrogen and phosphorus. Nitrates in drinking water can cause human health problems, while phosphorus is related to ecosystem health.

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Green Matters is the newsletter of the Alberta Environmentally Sustainable Agriculture (AESA) Council. AESA Council consists of 29 representatives from Alberta's agriculture and food processing industry, environmental organizations and government. Its mandate is to: identify and evaluate environmental issues facing Alberta's agriculture and food processing industry; encourage the industry to proactively address these issues; advise the Alberta Minister of Agriculture, Food and Rural Development on these issues; and direct the AESA Program.

The purpose of Green Matters is to provide a forum for discussion of environmental issues in Alberta's agriculture and food processing industry.

To subscribe to Green Matters, call 780-422-4385.

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Agriculture Program